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GENERAL NOTES.

Members and friends of the Society are invited to aid the Committee on Publication in carrying out the work of this department. Communications of general interest will be gladly received, and may be sent to SIDNEY D. TOWNLEY, 2023 Bancroft Way, Berkeley, California.

The Grand Prize of the Paris Exposition has been awarded to Professor A. MICHELSON, of the University of Chicago, for his Echelon spectroscope.

The honorary degree of Doctor of Science was conferred upon Professor ARMIN O. LEUSCHNER, head of the Department of Astronomy at Berkeley, by the Western University of Pennsylvania at the last annual commencement — June 14, 1900.

The Queen Regent of Spain has signed a decree establishing the method of accounting time in the kingdom as follows:—

(1) In all railway, mail (including telegraph), telephone, and steamship service in the Peninsula and the Balearic Islands, and in all the ministerial offices, the courts, and all public works, time shall be regulated by the time of the Greenwich Observatory, commonly known as western European time.

(2) The computation of the hours in the above-mentioned services will be made from the hour of midnight to the following midnight in hours from 1 to 24, omitting the words *tarde* (afternoon) and *noche* (night), heretofore in customary use.

(3) The hour of midnight will be designated as 24.

(4) The interval, for instance, between midnight (24) and 1 o'clock will be designated as 0.05, 0.10, 0.59. —*Science*.

Spain is thus the first nation in the world to adopt the astronomical, or 24-hour, method in the reckoning of civil time.

Observations of *Capella* as a double star have been made at Greenwich by no less than ten different observers. The observers state that "the change of position-angle observed through a large arc of the orbit agrees on the whole well with the calculated change, taking the period as 104 days." So far as we know, these results have not been confirmed by observations elsewhere.

Science (August 31, 1900) states that the degree of Doctor of Philosophy has been conferred this year on 233 candidates by twenty-two universities in the United States. In 1899 the number was 224, and in 1898, 234. Making a somewhat arbitrary distinc-

tion between the humanities and the sciences, there would seem to be very little difference in the numbers of students in the two classes; for the degree has been conferred in the sciences 105, 115, and 113 times; in the humanities 129, 109, 120 times.

The distribution of students among the different sciences shows that chemistry offers the greatest attraction, and meteorology the least, 85 degrees having been granted in the one, and 1 in the other in the three years.

Nine doctorates have been granted to candidates offering astronomy as their major. We give herewith the names of the four receiving the degree this year and the titles of their theses:

- G. N. BAUER: The Parallax of μ *Cassiopeia* and the Positions of 56 Neighboring Stars as Determined from the Rutherford Photographic Measures. Columbia University.
- CAROLINE E. FURNESS: Catalogue of Stars within One Degree of the North Pole, and Optical Distortion of the Helsingfors Astrophotographic Telescope, deduced from Photographic Measures. Columbia University.
- F. R. MOULTON: A Particular Class of Periodic Solutions of the Problem of Three Bodies. University of Chicago.
- H. N. RUSSELL: The General Perturbations of the Major Axis of *Eros* caused by the Action of *Mars*; with the Corresponding Terms in the Mean Longitude. Princeton University.

The second annual meeting of the Astronomical and Astrophysical Society of America was held on June 26–28, 1900, at Columbia University, in connection with the forty-ninth annual meeting of the American Association for the Advancement of Science.

The Secretary's report of the action of the Council showed an increase of forty-three in the membership of the Society during the year. Officers for the year 1900–01 were elected as follows: President, SIMON NEWCOMB; Vice-Presidents, C. A. YOUNG and G. E. HALE; Secretary, G. C. COMSTOCK; Treasurer, C. L. DOOLITTLE; Councillors, E. C. PICKERING, J. E. KEELER, ORMOND STONE and S. J. BROWN.

It was voted to hold the next meeting of the Society in Denver, Colo., in August, 1901.

About forty papers were read at the joint sessions of the Society with Section A of the A. A. A. S., and in addition the observations of the total solar eclipse of May 28, 1900, and the programme to be followed in observing *Eros* for parallax

at the approaching opposition were discussed at length. A general account of these discussions with abstracts of the papers presented before the Society is given by the Secretary, Professor COMSTOCK, in *Science*, Nos. 291 and 292.

In addition to the general accounts of the two expeditions sent from California to observe the Total Eclipse of the Sun last May (which are printed elsewhere in this number), it should be said that nearly all the parties, both in this country and in Europe, were quite successful, especially in the photographic observations. The spectroscopic and spectrographic results are more disappointing, and a number of parties report complete failures in these respects.

Extensive preliminary reports from most of the American parties are printed in the *Astrophysical Journal* for July, 1900. Considerable interest attaches to the results obtained with the bolometer, by members of the Smithsonian Institution party. These are summarized by Professor C. G. ABBOT, in the following statements:—

“1. The coronal radiation was recognized by the bolometer, and gave at least 5^{mm} deflection over that of the dark Moon.

“2. The radiation reflected by the Earth's atmosphere during the partial phase is vastly more intense than that of the corona.

“3. *The corona is effectively cooler than the bolometer, and appears, therefore, neither to reflect much light from the Sun nor chiefly by virtue of a high temperature to give light of its own, but seems rather to be giving light in a manner not associated with a high temperature, or at least with the preponderance of infra-red rays usual in the spectra of hot bodies.*

“As the last statement,” adds Dr. ABBOT, “involves a rejection of both the eruptive and meteoric coronal theories, it ought to receive searching criticism, and the experimental observations on which it rests ought to be verified at future eclipses.”

Professor T. C. CHAMBERLIN and Dr. F. R. MOULTON have recently been attempting to test the Nebular Hypothesis as formulated by LAPLACE (1) by means of the modern kinetic theory of gases, (2) by a comparison of the moment of momentum of the supposed nebular system with the moment of

momentum of the actual system, and (3) by a study of the ratios of masses to momenta. In *Science* (August 10, 1900), the authors give an interesting abstract of three of their recent technical papers. Without attempting to summarize their argument, we may state that their conclusion is altogether adverse to the tenability of the hypothesis. An original spheroidal nebulous or meteoroidal form of any kind is incompatible with the present distribution of the masses and momenta in the system. In any attempt to construct a tenable hypothesis, "the matter of the system must be so brought together as to give low mass, high momentum, and irregular distribution to the outer part, and high mass, low momentum, and sphericity to the central part." With reference to such an hypothesis, two suggestions are offered (both purely as conjectures) namely, that the system may have been originated by the peripheral collision of a very small nebula upon a large one; or that its primitive form may have been that of a spiral nebula.

Under the auspices of the International Astrophotographic Conference an extensive plan of campaign has been outlined for the determination of the solar parallax from observations of the minor planet *Eros* at its approaching opposition.

It will be remembered that *Eros* at certain oppositions approaches the Earth far more nearly than any other member of the solar system except the Moon, and that this year's opposition is more favorable than any other until the one of 1931. (See these *Publications*, No. 66, pp. 40-44.)

The Conference at its session in Paris, July 19-25, 1900, therefore adopted resolutions declaring it to be desirable that micrometric, heliometric, and photographic observations of *Eros* should be made for the purpose of determining the parallax constant, (a) by combining the morning and evening observations at the same observatory, (b) by combining the observations made at approximately the same absolute time in Europe and North America, and (c) by combining the (nearly) simultaneous observations made at northern and southern observatories. A great deal of work in addition to the actual parallax observations is necessary to insure the highest degree of accuracy. All the stars along the trajectory of the asteroid during the period of observation are to be photographed to afford means of determining with precision the places of the faint stars that must

necessarily be used in the micrometer observations. To give reference points for measuring these plates, 319 of the brighter stars must be observed with the meridian circle at a number of observatories. To eliminate the uncertainty still existing in our knowledge of the motion of *Eros*, various precautions must be taken in combining the observations, and an independent series of observations, both micrometric and photographic, should be available for perfecting the theory of the motion. M. ANDRÉ and M. PROSPER HENRY will also undertake special researches upon the atmospheric dispersion.

As more than thirty different observatories have agreed to co-operate in this work, we may confidently expect a very accurate determination of this fundamental constant of astronomy.